FOIVOS TSIMPOURLAS

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San Francisco, CA, United States

PROFESSIONAL EXPERIENCE

OpenAI   *July 2023 - Present*
Research Scientist   *San Francisco, CA*
· I was part of the reasoning team until March 2025 and was one of the foundational contributors to the releases of Deep Research, O1 and O3.
· I am part of the Health AI team and contributed to releasing HealthBench and ChatGPT Health.

TikTok - ByteDance   *Oct 2022 - Jan 2023*
Research Scientist, Contractor   *London, UK*
· I developed and published the first LLM-based tool for fault localization in Go concurrent test executions.

Facebook AI Research   *May 2022 - August 2022*
Research Scientist Intern   *Menlo Park, CA*
· I created the first directed code generator using Deep RL, LLMs and sampling guidance towards compiler features.
· I published my work in PACT and integrated it into CompilerGym, a state-of-the-art research tool for RL.

Athens Digital Arts Festival   *Oct 2020 - Dec 2021*
Research Scientist, Contractor   *Remote*
· I secured the research grant and led the research effort for "AITrace", a real time recommender for museums.
· I developed the AI for the project's pilot and reported our experimental findings to the Greek Deputy of Culture.

ARM Ltd.   *Sept 2019 - Jan 2020*
Software Engineer, Intern   *Cambridge, UK*
· I was the DRI for the first distributed GICv4 interrupt controller's software model for ARM-based clusters.
· I collaborated with Architecture researchers and Modeling engineers to implement and ship to production.

EDUCATION

PhD in Informatics   *2019 - 2023*
University of Edinburgh (UoE)
Thesis: *"Deep Language Models for Software Testing and Optimisation"*

Supervisors: Ajitha Rajan, Hugh Leather, Pavlos Petoumenos

· My research contributed to the integration of AI into compilers using LLMs, RL and the LLVM framework.

MSc by Research, CDT in Pervasive Parallelism   *2018 - 2019*
University of Edinburgh (UoE)   *Distinction*
Thesis: *"Learning to Encode and Classify Test Executions"*

Supervisors: Ajitha Rajan, Christophe Dubach

· My research focused on deep learning for compile runtime analysis and program correctness prediction.

MEng, Electrical Engineering & Computer Science   *2011 - 2018*
National Technical University of Athens   *Grade: 8.1/10*
Thesis: *"Resource Management Techniques for Embedded Architectures executing Deep Neural Networks"*

Supervisors: Dimitrios Soudris

· I improved GoogleNet's execution time by 16% on Intel's Myriad2 with a state of the art hardware acceleration algorithm.

PUBLICATIONS

gpt-oss-120b & gpt-oss-20b model card   *2025*
OpenAI and **F. Tsimpourlas**   *Arxiv*

Healthbench: Evaluating large language models towards improved human health   *2025*
RK Arora, J. Wei, RS Hicks, J. Quiñonero-Candela, **F. Tsimpourlas**, *M. Sherman, M. Shah, A. Vallone, A. Beutel,*
J. Heidecke, K. Singhal   *Arxiv*

Competitive Programming with Large Reasoning Models   *2025*
OpenAI and **F. Tsimpourlas**   *Arxiv*

Openai o1 system card   *2025*
OpenAI and **F. Tsimpourlas**   *Arxiv*

Go-Oracle: Automated Test Oracle for Go Concurrency Bugs   *2024*
F. Tsimpourlas, *C. Rosuero, C. Peng, P. Yang, A. Rajan*   *ICSE*

Deep language models for software testing and optimisation   *2023*
F. Tsimpourlas   *PhD Thesis*

BenchDirect: A Directed Language Model for Compiler Benchmarks   *2022*
F. Tsimpourlas, *P. Petoumenos, M. Xu, C. Cummins, K. Hazelwood, A. Rajan, H. Leather*   *Arxiv*

BenchPress: A Deep Active Benchmark Generator   *2022*
F. Tsimpourlas, *P. Petoumenos, M. Xu, C. Cummins, K. Hazelwood, A. Rajan, H. Leather*   *PACT*

Embedding and Classifying Test Execution Traces using Neural Networks   *2021*
F. Tsimpourlas, *G. Rooijackers, A. Rajan, M. Allamanis*   *IET Software*

Supervised Learning over Test Executions as a Test Oracle   *2021*
F. Tsimpourlas, *A. Rajan, M. Allamanis*   *SACSE*

AITrace: A Deep Learning Recommender for Museum Visitors   *2021*
F. Tsimpourlas, *F. Salmouka, M. Markellou*   *HFRI Greece*

A Design Space Exploration Framework for Convolutional Neural Networks Implemented on Edge Devices   *2018*
F. Tsimpourlas, *L. Papadopoulos, A. Bartsokas, D. Soudris*   *CODES+ISSS*

TECHNICAL SKILLS

Programming Languages	C++, C, Python, Bash, Assembly (x86, ARM, SHAVE-VLIW)
Machine Learning	Pytorch, TensorFlow, WandB, brix, Snowflake
Hardware Description	SystemC, LISA+
Compilers	LLVM, Libtooling, GCC, Clang
Tools	Valgrind, GDB, CMake, Bazel

ACADEMIC ACTIVITIES

Peer Reviews

· **FSE** - Reviewed ML on compiler engineering papers on main conference research track.   *2022*

· **ASE** - Reviewed ML to software testing papers on main conference research track.   *2019*

· **PATMOS** - Reviewed hardware acceleration papers for ML.   *2018*

Teaching

· Tutor, **Software Testing**, University of Edinburgh. Voted best tutor by students twice.   *2019-2022*

· Tutor & Marker, **Microprocessors Systems Lab**, NTUA   *2017 - 2018*

· Teaching Assistant, **Embedded Systems Design**, NTUA   *2017 - 2018*

Talks

· **PACT** - Delivered conference presentation for accepted publication as 1st author.   *2022*

· **HFRI Greece** - As AITrace's research lead, I presented our research roadmap and findings to HFRI's research committee including the Greek Deputy of Culture.   *2021*

· **SACSE** - Delivered conference presentation for accepted publication as 1st author.   *2021*

SCHOLARSHIPS AND AWARDS

· **HFRI grant no. 00782 for "AITrace" research project.** *2021*

Our research proposal secured €150,000 of research funding. 100 awarded research teams among thousand applicants.

· **PhD scholarship, EPSRC grant EP/L01503X/1.** *2018*

I was 1 of 8 students accepted to "CDT in Pervasive Parallelism" from thousands of applicants.

· **High school award for Panhellenic university entrance exams score**. *2011*

I achieved an average score of 97.48% placing in the top 1% among 90,000 students in the Panhellenic university entrance exams. I was one of very few students nationwide that scored 100% in all 5 science subjects.